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Shutaro Nakanishi

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EXAMINER

CHRISS, JENNIFER A

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,796	Applicant(s) NAKANISHI, SHUTARO	
	Examiner JENNIFER A. CHRISS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed November 10, 2008, have been entered and have been carefully considered. Claims 1 – 2 are amended, claim 3 is added and claims 1 – 3 are pending. In view of Applicant's amendment to claim 1 requiring that the crushed particulate material is attached to the front surface of the mat body, the Examiner withdraws the 35 USC 102/103 rejection as anticipated or obvious over Takeuchi et al. (US 4,510,201). After an updated search, additional art has been found which renders the invention as unpatentable for reasons herein below.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Newly submitted claim 3 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 3 is drawn to a process of producing a spread mat while claims 1 - 2 are product claims (original claims 1 - 2 were product-by-process claims). As the determination of patentability of product-by-process claims and product claims are based on the product itself, the Examiner submits that the original claims are significantly different than Applicant's new process claim 3. Furthermore, the invention of claims 1 - 2 and the invention of claim 3 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT

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Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I (claims 1 – 2) has the special technical feature a spread mat having a mat body containing stacked and looped resin filaments having crushed particulate material on the front surface of the mat in a certain density while Group II (claim 3) has the special technical feature of a mat body having crushed particulate matter applied by spraying at a certain distribution rate and bonding the particulate material through an adhesive agent onto a front surface. It should be noted that Group I requires the particulate matter to be present on the surface and Group II only requires that it is applied via the surface but does not dictate where its ultimate location. Groups I and II do not share the same special technical feature and, as a result, unity of invention is not present. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 3 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 1 has the new limitation of "the crushed particulate material...has a density from 50 to 150 g/m²". The Specification does not have support for "a density from 50 to 150 g/m²".

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 2 is rejected as being dependent on claim 1.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. Claim 1 has the new limitation of "the crushed particulate material...has a density from 50 to 150 g/m²". Although Applicant's Specification on page 4, lines 19 – 25 teaches that the *distribution rate* is in a range from 50 to 150 g/m², it does not indicate that the particles have a density from 50 to 150 g/m².

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 1 recites that "the crushed particulate material...has a density from 50 to 150 g/m²". It is unclear what this density refers to: does it mean that the particles are

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applied within this range to a surface or that the particles themselves have this particular density, i.e. particle density? For purposes of examination at this time, the Examiner will interpret this to mean that the particles are applied on the surface in a density ranging from 50 to 150 g/m².

Claim Rejections - 35 USC § 103

11. Claims 1 – 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiragami et al. (US 4,501,783) in view of GB 1,247,373 and Kwak et al. (US 2002/0111406) as evidenced by the article entitled “A Quick and Easy Formula for Mesh-Micron Particle Conversions” by Don Kirk.

Hiragami et al. is directed to a non-slip floor material (Title).

As to claims 1 - 2, Hiragami et al. teach that the floor material comprises a polyvinyl matrix layer having dispersed therein synthetic resin particles in an amount of at least 3 weight % of the entire matrix layer where a quantity of resin particles are exposed from the surface of the matrix layer (column 1, lines 55 - 69). Hiragami et al. teach that the polyvinyl chloride matrix layer is made with polyvinyl chloride with known additives such as a plasticizer, filler and thermal stabilizer (column 2, lines 5 - 10). In the Examples, Hiragami et al. teach the use of DOP as the plasticizer and teach the inclusion of thermoplastic polyurethane which the Examiner equates to Applicant's diluent (see columns 3 – 6). Hiragami et al. teach that the particles, including the ones exposed at the surface, can comprise synthetic resin particles which are not limited to fresh materials but also can be waste plastic particles in pulverized form (column 2,

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lines 15 - 30). The particles are preferably in the range of 100 microns to 1 mm in particle size (column 2, lines 45 – 60). According to the article by Don Kirk, particle size and mesh can be easily converted using the formula published in the paper where $\text{microns} = 15,000/\text{mesh}$ according to the Kirk Mesh Equation or according to the trendline where $\text{microns} = 14,992/\text{mesh}$. As shown in the chart, a particle size of 100 microns - 1000 microns as taught by Hiragami et al. would be equated to approximately 150 - 15 mesh which completely encompasses Applicant's claimed range. It should be noted that the pulverized plastic as it has been crushed in some sort of manner is equated to Applicant's "crushed particulate material". The polyvinyl chloride matrix is equated to Applicant's "adhesive agent" and the particles which are exposed on the surface of the matrix layer are equated to Applicant's "crushed particulate material attached to the front surface of the mat body". As shown in Figure 1, the polyvinyl chloride matrix is attached to a backing such as a sheet of foamed or non-foamed plastic, woven or nonwoven fabric (column 2, lines 65 - 69).

Although Hiragami et al. contemplates using a nonwoven fabric for the backing, Hiragami et al. fail to specifically teach that the backing or Applicant's "mat body" comprises stacked and looped resin filaments.

GB 1,247,373 is directed to weather-resistant outdoor mat or carpeting (page 1, lines 45 - 50). The reference discloses that the mat comprises a smooth-surfaced open porous integrated matt (i.e. tangled matt) of continuous crinkled fibers or mono-filaments (page 1, lines 10 – 20). GB 1,247,373 discusses that the mat comprises laterally extending coils and loops of the filaments (page 2, lines 60 - 80, also see

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Figure 4) and the filaments are using polymeric materials such as polyester, polyvinyl, etc. (page 2, lines 120 – 130). The Examiner equates the tangled matt of laterally extending coils and loops to Applicant's "mat body of stacked and looped resin filaments". The reference indicates that the completed mat may also be modified, if desired, by applying particulate matter such as abrasive grains, etc. (page 3, lines 1 - 20). GB 1,247,373 note that the mat provides a safe, pleasant walking surface and the open nature of the web permits easy cleaning and washing as well as rapid drying and provides a crush resistant surface (page 1, lines 45 - 60 and page 3, lines 50 - 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the looped mat of continuous filaments as suggested by GB 1,247,373 as the nonwoven backing of Hiragami et al. motivated by the desire to create a floor mat having resiliency and has an easy clean surface.

In the Examples, Hiragami et al. teach the use of DOP as the plasticizer (see columns 3 – 6). Hiragami et al. in view of GB 1,247,373 teach the claimed invention above but fail to disclose that the polyvinyl chloride matrix specifically has a polyester-based plasticizer.

Kwak et al. is directed to an aliphatic polyester used for plasticizing polyvinyl chloride (Abstract). Kwak et al. indicate in the background that many plasticizers are used to create flexible PVC such as di[2-ethylhexyl]phthalate or DOP which is a low molecular weight plasticizer (page 1, [0005]). Kwak et al. indicate that the low molecular weight plasticizers are undesirable because they tend to volatize into the air or transfer

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to the outside through the contacts with liquid or solid substance creating an environmentally unfriendly blend (page 1, [0006] - [0009]). In order to alleviate this issue, Kwak et al. developed a aliphatic polyester compound for plasticizing polyvinyl chloride which avoids the volatizing issue while having superior compatibility with polyvinyl chloride, superior efficiency to plasticize and providing the polyvinyl chloride sufficient flexibility (page 1, [0012]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an aliphatic polyester plasticizer as suggested by Kwak et al. instead of DOP as suggested in the Examples of Hiragami et al. motivated by the desire to create an environmentally-friendly floor mat.

Hiragami et al. in view of GB 1,247,373 and Kwak et al. disclose the claimed invention except for that the crushed particulate matter is present on surface at a density of 50 to 150 g/m². The amount of crushed particulate matter is a result effective variable. Hiragami et al. note that the amount of particulate matter should be at least 3 weight % based on the entire weight of the matrix layer and there is no particular upper limit but the use of more than 30 weight % produces little or no enhanced effect (column 2, lines 45 – 60). Hiragami et al. note the desire to provide increased friction of the floor material preventing continuous slippage and exhibiting outstanding non-slip properties but while also having a substantially smooth surface which retains a beautiful appearance at all times (column 3, lines 20 - 45). It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the floor mat

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with a particulate material density of 50 to 150 gsm since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of surface particulate matter in order to create a floor mat having the desired level of non-slip properties balanced with a substantially smooth and beautiful appearance.

Response to Arguments

12. Applicant's arguments with respect to claims 1 - 2 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. CHRISS whose telephone number is (571)272-7783. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 6 p.m., first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. C./
Examiner, Art Unit 1794

/Ula C Ruddock/
Primary Examiner, Art Unit 1794